APPENDIX 4A

NARRATIVE DISCUSSION OF ENVIRONMENTAL POLLUTANTS AND FUTURE CHANGES IN ENVIRONMENTAL LAWS, REGULATIONS, OR STANDARDS

TABLE OF CONTENTS

In accordance with 4 CSR 240-22.040(2)(B), this section identifies a list of environmental pollutants for which additional environmental laws or regulations may be imposed at some point within the planning horizon. Environmental laws or regulations may impact air emissions, water discharges, or disposal of materials generated. The following sections summarize pollutants which could result in compliance costs that could have a significant impact on utility rates.

SECTION 1: AIR IMPACTS

1.1 NATIONAL AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate matter (PM), ground-level ozone, carbon monoxide (CO), sulfur oxides (SO_x), nitrogen oxides (NO_x), and lead. The EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards.[i]

1.2 PARTICULATE MATTER

The EPA revised the air quality standards for PM in 2006. The 2006 standards tightened the 24-hour fine particulate matter (PM2.5) emission standard from 65 micrograms per cubic meter (µg/m3) to 35 µg/m3, and retained the annual fine particulate matter emission standard at 15 µg/m3. The EPA retained the existing 24-hour course particle (PM10) standard of 150 µg/m3 but revoked the annual PM10 standard. Ambient air particulate particles are currently measured by a state operated monitoring network with monitors across the state. In February 2009, the D.C. Circuit granted petitions for review of the revised primary and

secondary annual fine particulate matter standards and remanded the matter to the EPA for reconsideration.

The EPA issued a revised PM standard in 2013. The standards reduced the annual primary PM2.5 NAAQS to 12 µg/m3. The rule also adopted requirements for near-road PM2.5 monitoring. The rule did not, however, add a new, separate secondary standard. In May 2014, the D.C. Circuit upheld legal challenges for most aspects of the 2013 PM NAAQS rule.

Non-attainment of a revised standard could ultimately result in regulations requiring additional PM reduction technologies, emission limits or both on fossil-fueled units. $PM_{2.5}$ may also require additional NO_x and SO_2 control as precursors.

1.3 OZONE

Ground-level ozone is not emitted directly into the air, but is created by chemical reactions between NO_x and volatile organic compounds in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOCs. Ground-level ozone is measured at various monitoring stations in and around the Kansas City metropolitan area to determine compliance with this standard.

In March 2008, the EPA significantly strengthened the NAAQS for ground-level ozone. The EPA's final rule revised both ozone standards: the primary standard, designed to protect human health; and the secondary standard, designed to protect welfare (such as vegetation and crops). The EPA set the primary standard to a level of 75 parts per billion (ppb). The EPA also strengthened the secondary 8-hour ozone standard to the level of 75 ppb making it identical to the revised primary standard.

In January 2010, the EPA proposed to strengthen the 2008 NAAQS for ground-level ozone yet again. The EPA proposed to strengthen the 8-hour "primary" ozone standard, designed to protect public health, to a level within the range of 60 70 ppb. The EPA also proposed to establish a distinct cumulative, seasonal "secondary" standard, designed to protect sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas. The EPA proposed to set the level of the secondary standard within the range of 7-15 parts per million- (ppm) hours. The proposed revisions result from a reconsideration of the identical primary and secondary ozone standards set at 75 ppb in 2008. In September 2011, President Obama asked the EPA to withdraw the proposed rule. The EPA withdrew the rule and announced that it would continue to address the ozone NAAQS as part of its periodic review of the NAAQS, already underway. Thereafter, litigation concerning the 2008 ozone NAAQS revisions resumed. In July 2013, the D.C. Circuit issued its opinion, upholding the revisions to the primary standard, but remanding the secondary NAAQS to the EPA.

The statutory deadline for the EPA to complete its review of the 2008 NAAQS standards was March 2013. The EPA did not meet that deadline. Several environmental groups filed suit seeking an order that the EPA complete the review. In April 2014, the court adopted the plaintiffs' proposed schedule. Thus, the EPA must issue a proposal by December 2014 and a final rule no later than October 2015. In November 2014, the EPA proposed to strengthen the NAAQS for ground-level ozone, based on scientific evidence about ozone's effects on public health and welfare. EPA is proposing to update both the primary ozone standard, to protect public health, and the secondary standard, to protect the public welfare (protection for trees, plants and ecosystems). Both standards would be 8-hour standards set within a range of 65 to 70 ppb. EPA is seeking comment on levels for the health standard as low as 60 ppb. EPA's proposal finds that the current level of the standard (75 ppb) is not adequate to protect public health.

Future non-attainment of a revised standard could ultimately result in regulations requiring additional NO_x reduction technologies, emission limits or both on fossil-fueled units.

1.4 CARBON MONOXIDE

In August 2011, the EPA issued a decision to retain the existing NAAQS for CO.

Future non-attainment of a revised standard could ultimately result in regulations requiring additional CO reduction technologies, emission limits or both on fossil-fueled units.

1.5 SULFUR DIOXIDE AND NITROGEN OXIDES (ACID RAIN PROGRAM)

The overall goal of the Acid Rain Program (ARP) is to achieve significant environmental and public health benefits through reductions in emissions of SO_2 and NO_x—the primary causes of acid rain.[ii]

The ARP set a goal of reducing annual SO_2 emissions by 10 million tons below 1980 levels. To achieve these reductions, the law required a two-phase tightening of the restrictions placed on fossil fuel-fired power plants.

Phase I began in 1995 and affected mostly coal-burning electric utility plants located in 21 eastern and midwestern states. Emissions data indicate that 1995 SO_2 emissions at these units nationwide were reduced by almost 40 percent below their required level.

Phase II, which began in the year 2000, tightened the annual emissions limits imposed on these large, higher emitting plants and also set restrictions on smaller, cleaner plants fired by coal, oil, and gas.

The ARP also called for a 2 million ton reduction in NO_x emissions by the year 2000. A significant portion of this reduction has been achieved by coal-fired utility

boilers installing low NO_x burner technologies to meet new emissions standards.[iii]

1.6 NITROGEN DIOXIDE

In January 2010, the EPA strengthened the health-based NAAQS for nitrogen dioxide (NO_2). The EPA set a new 1-hour NO_2 standard at the level of 100 parts per billion (ppb).

Future non-attainment of a revised standard could ultimately result in regulations requiring additional NO_x reduction technologies, emission limits or both on fossil-fueled units.

1.7 SULFUR DIOXIDE

In June 2010, the EPA strengthened the primary NAAQS for SO_2. The EPA revised the primary SO_2 standard, designed to protect public health, to 75 ppb measured over one hour. The EPA revoked the two existing primary standards of 140 ppb measured over 24 hours, and 30 ppb measured over an entire year. The EPA is also considering the need for changes to the secondary standard under a separate review.

States and industries requested reconsideration, that was denied, filed suit in the D.C. Circuit seeking judicial review of both the final rule. In July 2012, the D.C. Circuit upheld the rule. Although litigation over the standard is over, questions over its implementation remain far from settled. The intense opposition by many states and industries to the novel modeling-based implementation approach led the EPA in April 2012 to send letters to the states making it clear that the EPA no longer expected the states' state implementation plans (SIP) to include any modeling or attainment demonstrations.

In August 2012, the EPA published notice that it needed more time to make its final designations. The EPA said it intended to use the additional year permitted by the CAA for it to make designations until June 2013.

In February 2013, the EPA announced a comment period on its proposed responses to the designations that it had received from states. The EPA indicated that in June 2013, it would not be promulgating designations for all areas. Instead, the EPA said it intended to promulgate designations only for areas with monitoring data showing non-attainment. The EPA indicated that it planned to release for public comment draft technical assistance documents for modeling and monitoring, followed in later 2013 by a proposed rule on data requirements for determining attainment of the SO_2 NAAQS. The EPA indicated that by 2015, states would have to identify where they would use SO2 monitoring data in NAAQS implementation and where they would want to use air quality modeling in NAAQS implementation. In 2016, states would have to provide new monitoring plans and modeling protocols. Further designations based on modeling would be made in December 2017 and those based on monitoring would be made in December 2020. In addition, the document indicates that states will have the option to submit by December 2017 SIPs that contain source-specific enforceable emission limits to avoid non-attainment designations.

In August 2013, the EPA published a final rule that designated as non-attainment 29 areas in 16 states including an area in Kansas City. States must submit control strategy SIPs for these areas within 18 months of those designations. Based on the October 2013 effective date of these designations, the EPA expects these SIPs no later than April 2015. In April 2014, the EPA issued guidance for the preparation of these SIPs.

A case was filed in federal district court alleging that the EPA had failed to make designations for the rest of the country by the statutory deadline of June 2013. In May 2014, the EPA and the environmental group petitioners lodged a consent decree with the court over the objections of the state intervenors. Under the consent decree, within 16 months after its entry, the EPA would have to make designations for (1) any area that had monitored a violation of the one-hour NAAQS in the preceding three years, and (2) for any area with a source included in EPA's Clean Air Markets Database that, in 2012, emitted more than 16,000

tons of SO_2 or emitted at least 2,600 tons of SO2 and had an annual average emission rate of at least 0.45 lbs/mmbtu unless that source has announced it will cease burning coal. Then, by December 31, 2017, the EPA would have to sign a rule making designations for any area not previously designated and that had not begun operating a new SO_2 monitoring network meeting the EPA specifications. Finally, by December 31, 2020, the EPA would have to sign a rule making designations for all remaining areas.

In May 2014, just prior to lodging the consent decree on designations, the EPA proposed an SO_2 Data Requirements Rule. This proposed rule largely implements the approach to designations that the EPA had outlined in its February 2013 strategy document. It gives states the option of using either new monitoring or modeling as the basis for designations. Consistent with the schedule in the consent decree, the proposal is for designations based on modeling to be made by December 31, 2017, and those based on monitoring to be made by December 31, 2020. The EPA has also released draft technical assistance documents to provide more information on the monitoring or modeling to be used for designations.

Future non-attainment of a revised standard could ultimately result in regulations requiring additional SO_2 reduction technologies, emission limits or both on fossil-fueled units.

1.8 CLEAN AIR INTERSTATE RULE

In March 2005, The EPA issued the Clean Air Interstate Rule (CAIR), a rule that reduced air pollution that moves across state boundaries. CAIR permanently capped emissions of SO_2 and NO_x in the eastern United States. When fully implemented, CAIR will reduce SO_2 emissions in these states by over 70 percent and NO_x emissions by over 60 percent from 2003 levels.[iv]

Through the use of the cap-and-trade approach, CAIR achieves substantial reductions of SO_2 and NO_x emissions and will assist the eastern U.S. meet

EPA's protective air quality standards for ozone or fine particles. SO_2 and NO_x contribute to the formation of fine particles and NO_x contributes to the formation of ground-level ozone.

CAIR covers 28 eastern states and the District of Columbia. States must achieve the required emission reductions using one of two compliance options: 1) meet the state's emission budget by requiring power plants to participate in an EPA-administered interstate cap and trade system that caps emissions in two stages, or 2) meet an individual state emissions budget through measures of the state's choosing.

CAIR provides a Federal framework requiring states to reduce emissions of SO_2 and NO_x. The EPA anticipates that states will achieve this primarily by reducing emissions from the power generation sector. The CAA requires that states meet the new national, health-based air quality standards for ozone and $PM_{2.5}$ standards by requiring reductions from many types of sources. Some areas may need to take additional local actions. CAIR reductions will lessen the need for additional local controls.

On July 11, 2008, the D.C. Circuit Court of Appeals vacated the CAIR in its entirety and sent it back to the EPA to promulgate a rule that is consistent with its opinion. On December 23, 2008, the Court issued an order remanding the CAIR to the EPA instead of vacating the rule. This means that CAIR remained in place. KCP&L generation units comply with CAIR by obtaining adequate allowances by trading internally within the Company or externally with other companies.

1.9 CROSS-STATE AIR POLLUTION RULE

In July 2011, the EPA finalized the Cross-state Air Pollution Rule (CSAPR). The CSAPR replaces the EPA's 2005 CAIR. In order to replace CAIR as quickly as possible to address air pollution that is transported across state boundaries, the EPA adopted federal implementation plans, or FIPs, for each of the states covered by this rule. The CSAPR requires 27 states in the eastern half of the

United States, including Kansas and Missouri, to reduce power plant emissions that cross state lines and contribute to ground-level ozone and fine particle pollution in other states. At the same time, the EPA issued a supplemental proposal that would require six states (Iowa, Kansas, Michigan, Missouri, Oklahoma, and Wisconsin) to make summertime NO_x reductions under the CSAPR ozone-season control program. Finalizing this supplemental proposal would bring the total number of covered states under the CSAPR to 28.

The final rule requires significant reductions in SO_2 and NO_x emissions from power plants in the eastern half of the United States. These pollutants react in the atmosphere to form PM2.5 and ground-level ozone and are transported long distances, making it difficult for a number of states to meet the national clean air standards. Emission reductions under the CSAPR were to take effect quickly. The first phase of compliance was to begin January 1, 2012 for SO_2 and annual NO_x reductions and May 1, 2012 for ozone season NO_x reductions. The second phase of SO_2 reductions was to begin January 1, 2014. By 2014, the CSAPR and other final state and EPA actions were to have reduced power plant SO_2 emissions by 73 percent from 2005 levels. Power plant NO_x emissions were to drop by 54 percent.

The rule allows air-quality-assured allowance trading among covered sources, utilizing an allowance market infrastructure based on existing, successful allowance trading programs. The final CSAPR allows sources to trade emissions allowances with other sources within the same program (e.g., ozone season NO_x) in the same or different states, while firmly constraining any emissions shifting that may occur by requiring a strict emission ceiling in each state (the budget plus variability limit). It also includes assurance provisions that ensure each state will make the emission reductions necessary to fulfill the “good neighbor” provision of the CAA.

The EPA initiated three additional CSAPR-related rulemakings revising the terms of the final rule. The first of the subsequent rules added certain states to the list

of those subject to CSAPR's ozone-season NO_x program (excluding Kansas); the other two corrected errors in the final rule, resulting in revisions to several states' CSAPR emission budgets, and extended the date on which certain restrictions on use of traded and banked emission allowances under the CSAPR program would take effect.

In the late summer and early fall of 2011, dozens of parties filed petitions for review of CSAPR in the D.C. Circuit. In total, 45 petitions for review of CSAPR were filed. Others also filed petitions for review of the three CSAPR-related rules described above that the EPA published after it published the final CSAPR. Those cases were held in abeyance at the request of the parties pending final resolution of the CSAPR litigation.

Several petitioners filed motions to stay CSAPR. On December 30, 2011, the last business day before CSAPR was scheduled to take effect, the D.C. Circuit granted the motions to stay CSAPR. The Court's order stayed the effectiveness of CSAPR pending the Court's resolution of the petitions for review and stated that the EPA "is expected to continue administering" CAIR during the period of the stay. The Court ordered an expedited briefing schedule on the merits.

In August 2012, the D.C. Circuit issued a decision vacating CSAPR in its entirety and remanding it to the EPA, and directed the EPA to continue administering CAIR pending promulgation of a "valid replacement" rule. In March 2013, the EPA and environmental groups filed petitions for a writ of certiorari with the U.S. Supreme Court, requesting review by that court of the D.C. Circuit's decision.

The Supreme Court issued its decision in April 2014, reversing the D.C. Circuit's August 2012 judgment and remanding the case to the D.C. Circuit for additional litigation proceedings consistent with the Supreme Court's opinion. The Supreme Court concluded that "wholesale invalidation" of CSAPR was not justified on the basis of the D.C. Circuit's rationale. The Supreme Court explained that challenges to CSAPR could proceed, after remand of the case to

the D.C. Circuit, on any grounds on which application of CSAPR might be arbitrary or otherwise improper.

In addition, the Supreme Court recognized that issues that petitioners had briefed in the D.C. Circuit in their challenges to CSAPR, but that the D.C. Circuit did not address in its 2012 decision, because it had no need to address them given its conclusion that CSAPR was invalid on other grounds, remain available to be pursued by petitioners in remand proceedings in the D.C. Circuit.

The EPA and environmental groups filed motions with the D.C. Circuit to lift the stay of CSAPR. In October 2014, the D.C. Circuit issued an order granting EPA's motion to lift the stay of the CSAPR that that court issued on December 30, 2011. EPA's motion asked the court to toll the CSAPR compliance deadlines by three years, so that CSAPR's Phase 1 emission budgets would apply in 2015 and in 2016, and CSAPR's Phase 2 emission budgets would apply in 2017 and subsequent years. In addition, the order sets a schedule for briefing remaining issues in the challenges to CSAPR in the D.C. Circuit. In November 2014, based on the October Court Order, EPA issued an interim final rule promulgating the new compliance dates for the CSAPR. The Company will comply through a combination of trading allowances within or outside its system in addition to changes in operations as necessary.

1.10 REGIONAL HAZE

In June 2005, the EPA finalized amendments to the July 1999 regional haze rule. These amendments apply to the provisions of the regional haze rule that require emission controls known as best available retrofit technology, or BART, for industrial facilities emitting air pollutants that reduce visibility by causing or contributing to regional haze.

The pollutants that reduce visibility include $PM_{2.5}$, and compounds which contribute to $PM_{2.5}$ formation, such as NO_x, SO_2, and under certain conditions volatile organic compounds, and ammonia.

The BART requirements of the regional haze rule apply to facilities built between 1962 and 1977 that have the potential to emit more than 250 tons a year of visibility-impairing pollution. Those facilities fall into 26 categories, including utility and industrial boilers, and large industrial plants such as pulp mills, refineries and smelters.

Under the 1999 regional haze rule, states are required to set periodic goals for improving visibility in the 156 natural areas. As states work to reach these goals, they must develop regional haze implementation plans that contain enforceable measures and strategies for reducing visibility-impairing pollution.[v]

The Regional Haze Rule directs state air quality agencies to identify whether visibility-reducing emissions from sources subject to BART are below limits set by the state or whether retrofit measures are needed to reduce emissions. It also directs these agencies to file Regional Haze SIPs with the EPA for approval.

KCP&L is currently installing emission controls at its La Cygne Generating Station to comply with the BART requirements. Future BART progress goals could result in additional SO_2, NO_x and PM controls or reduction technologies on fossil-fired units.[vi]

1.11 LEAD

In October 2008, the EPA substantially strengthened the NAAQS for lead. The EPA revised the level of the primary standard from 1.5 µg/m3, to 0.15 µg/m3, measured as total suspended particulates . The EPA revised the secondary standard to be identical in all respects to the primary standard.[vii]

Non-attainment of a revised standard could ultimately result in regulations requiring additional lead reduction technologies, emission limits or both on coal units.

1.12 CARBON DIOXIDE

In 2007, the U.S. Supreme Court's decision in *Massachusetts v. EPA*, held that greenhouse gases (GHG) meet the definition of air pollutant in the CAA and that the EPA therefore has authority to regulate those emissions under the act to address climate change if the EPA makes certain findings that are prerequisites to regulation.

In June 2013, the President announced a series of actions to reduce carbon pollution, prepare the country for the impacts of climate change, and lead international efforts to address global climate change. One component of the plan was to reduce carbon pollution from existing power plants.

The President's Climate Action Plan specifically directed the EPA to issue proposed carbon pollution standards, regulations, or guidelines, as appropriate, for modified, reconstructed, and existing power plants by no later than June 1, 2014; issue final standards, regulations, or guidelines, as appropriate, for modified, reconstructed, and existing power plants by no later than June 1, 2015; and require states to submit section 111(d) plans by no later than June 30, 2016.

Section 111(d) of the CAA governs the regulation of emissions from existing sources of air pollutants that are not listed as criteria air pollutants pursuant to section 108 of the CAA or listed as hazardous air pollutants under CAA section 112. Regulation of existing sources under this provision rarely occurs. Section 111(d) does not directly authorize the EPA to establish standards of performance for existing sources. Rather, that section of the CAA directs the EPA to issue regulations governing the procedure by which states are to submit plans to the EPA regarding how the states will regulate existing sources within their borders. The EPA's regulations set forth a process that is much like the one used by states to develop their SIPs.

On June 2, 2014, the EPA issued its proposed rule regarding regulation of carbon dioxide (CO_2) emissions from existing power plants under section 111(d),

which the EPA calls the Clean Power Plan. The Clean Power Plan would require each state with fossil fuel-fired generation to meet state-specific emission rate-based CO_2 goals by 2030. Each state's rate is calculated using a basic formula: CO_2 emissions from fossil fuel-fired power plants in pounds divided by state electricity generation from fossil fuel-fired power plants and certain low- or zero-emitting power sources in megawatt hours. State- and regional-specific information (such as the state's fuel mix and its electricity market) is plugged into the formula, and the result of the equation is the state-specific goal that must be met by 2030. In addition to the 2030 final goal, the EPA assigned each state an interim reduction target, which is an average emission rate that must be met over the period 2020 to 2029.

The EPA says that these state-specific goals reflect its consideration of best system of emission reduction (BSER), which is determined based on four building blocks: (1) reducing the carbon intensity of generation at electric generating units (EGUs) through heat rate improvements; (2) reducing CO_2 emissions by substituting generation at carbon-intensive EGUs with generation from less carbon-intensive generation (i.e., environmental dispatch); (3) reducing CO_2 emissions by substituting generation at fossil fuel-fired EGUs with expanded low- or zero-carbon generation (i.e., increased renewable generating capacity, increased nuclear generation); and (4) reducing CO_2 emissions through the use of demand-side energy efficiency programs. In the proposed rule, the EPA says that states can adopt any mix of these building block policies or any other measures to achieve the state-specific emission reduction goals the EPA has identified, including entering into multi-state emission allowance trading programs or using the portfolio approach, which the EPA describes as plan components where full responsibility for actions achieving reductions is not placed entirely upon emitting EGUs; instead, state plans could include measures and policies (e.g., demand-side energy efficiency programs and renewable portfolio standards) for which the state itself is responsible.

The proposed rule also contains guidelines to assist states in the development, submission, and implementation of state plans, including approvability criteria, requirements for state plan components, the process and timing for state plan submittal, and the process and timing for demonstrating achievement of the CO_2 emission performance level in each state plan. The EPA proposes to evaluate the approvability of state plans based on four general criteria: (1) enforceable measures that reduce CO_2 emissions from EGUs; (2) projected achievement of emission performance equivalent to the goals established by the EPA, on a timeline equivalent to that in the emission guidelines; (3) quantifiable and verifiable emission reductions; and (4) a process for biennial reporting on plan implementation, progress toward achieving CO_2 goals, and implementation of corrective actions, if necessary. Each state must submit a plan to the EPA by June 30, 2016, but if a state needs additional time, it can submit an initial plan by June 30, 2016, that documents the reasons why the state needs more time and includes commitments for concrete steps that will ensure that the state will submit a complete plan by June 30, 2017 (for plans based on single-state programs), or by June 30, 2018 (for plans based on multi-state programs). The EPA also proposes to extend from four months to twelve months the period for the EPA to review and approve or disapprove the state plans.

1.13 MERCURY AND AIR TOXICS STANDARDS

In December 2011, the EPA finalized the Mercury and Air Toxics Standards (MATS) rule. MATS applies to EGUs larger than 25 megawatts that burn coal or oil for the purpose of generating electricity for sale and distribution through the national electric grid to the public. For all existing and new coal-fired EGUs, the rule establishes numerical emission limits for mercury, PM (a surrogate for toxic non-mercury metals), and hydrochloric acid (a surrogate for all toxic acid gases). The standards set work practices, instead of numerical limits, to limit emissions of organic air toxics, including dioxin/furan, from existing and new coal- and oil-fired power plants. Because dioxins and furans form as a result of inefficient combustion, the work practice standards require an annual performance test

program for each unit that includes inspection, adjustment, and/or maintenance and repairs to ensure optimal combustion.

Compliance is required within three years or by April 16, 2015. Although, if an existing source is unable to comply within three years, a permitting authority has the discretion to grant such a source up to a 1-year extension, on a case-by-case basis, if such additional time is necessary for the installation of controls.

Industry and labor parties and 24 states challenged the MATS rule in the D.C. Circuit. The D.C. Circuit issued their decision in the MATS rule litigation on April 15, 2014. The court denied all petitions for review. A petition for certiorari of the D.C. Circuit's decision was filed. In November 2014, the U.S. Supreme Court issued an order granting the petitions for certiorari filed by industry and twenty states regarding the challenge of the MATS. The Supreme Court will hear the case on the following issue, "Whether the Environmental Protection Agency unreasonably refused to consider costs in determining whether it is appropriate to regulate hazardous air pollutants emitted by electric utilities."

1.14 INDUSTRIAL BOILER MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY STANDARDS

In January 2013, the EPA finalized a revised Industrial Boiler Maximum Achievable Control Technology (MACT) rule to reduce emissions of toxic air pollutants from new and existing industrial, commercial, and institutional boilers and process heaters at major sources facilities. The final rule will reduce emissions of toxic air pollutants including mercury, other metals, and organic air toxics.

SECTION 2: POTENTIAL FUTURE REGULATED POLLUTANTS

2.1 MULTI-POLLUTANT IMPACTS

Future EPA revisions to New Source Performance Standards (NSPS) could require near Prevention of Significant Deterioration (PSD) limits for new units or major modifications of fossil-fired units. Future multi-pollutant legislation or regulations could require additional control technology or reduced emissions at all fossil-fired units. Legislation possibilities include criteria pollutants, HAPs, or CO_2 emission reductions. Regulation possibilities include a regulatory response to criteria pollutants, HAPs, or CO_2 emission reductions without thresholds.

SECTION 3: WATER IMPACTS

3.1 CLEAN WATER ACT SECTION 316(A) THERMAL DISCHARGE REGULATIONS OR POLICY

KCP&L's river stations current National Pollutant Discharge Elimination System (NPDES) permit have expired. KCP&L submitted a renewal application within the required timeframe. The current permits remain in effect until MDNR issues new NPDES permit.

The MDNR has placed a hold on the issuance of Missouri River NPDES permits based on a discussions between MDNR and EPA on thermal discharges to the Missouri River. The permits generally define a specific limit, i.e., exceedance, for thermal discharge in btu/day based on a state Water Quality Standard (WQS) discharge temperature of 90^{o}F. However, the MDNR permit defines a violation in thermal discharge based on a complex formula involving discharge temperature, river volume, etc. It is this difference between exceedance and violation that is the basis for the discussion between has EPA and MDNR. KCP&L's river plants comply with the calculated limits as defined in the permit.

Future regulations or policy could be issued that restricts thermal discharges requiring alternative cooling technologies to be installed at coal fired units using once through cooling.

3.2 CLEAN WATER ACT SECTION 316(B) FISH IMPINGEMENT REGULATIONS

In May 2014, EPA has finalized standards under the Clean Water Act to follow through on a settlement agreement with environmental groups whereby EPA agreed to issue regulations to reduce injury and death of fish and other aquatic life caused by cooling water intake structures at existing power plants and factories.

There are three main components to the final regulation. First, existing facilities that withdraw at least 25 percent of their water from an adjacent waterbody

exclusively for cooling purposes and have a design intake flow of greater than 2 million gallons per day are required to reduce fish impingement under the final regulations. To ensure flexibility, the owner or operator of the facility will be able to choose one of seven options for meeting best technology available requirements for reducing impingement.

Second, existing facilities that withdraw very large amounts of water at least 125 million gallons per day are required to conduct studies to help their permitting authority determine whether and what site-specific controls, if any, would be required to reduce the number of aquatic organisms entrained by cooling water systems. This decision process would include public input.

Third, new units that add electrical generation capacity at an existing facility are required to add technology that achieves one of two alternatives under the national best technology available standards for entrainment for new units at existing facilities. Under the first alternative new unit entrainment standard, the owner or operator of a facility must reduce actual intake flow at the new unit, at a minimum, to a level commensurate with that which can be attained by the use of a closed-cycle recirculating system. Under the second alternative new units entrainment standard, the owner or operator of a facility must demonstrate to the Director that it has installed, and will operate and maintain, technological or other control measures for each intake at the new unit that achieves a prescribed reduction in entrainment mortality of all stages of fish and shellfish that pass through a sieve with a maximum opening dimension of 0.56 inches.[viii]

The final section 316(b) regulations could severely restrict cooling water inlet structures potentially requiring closed cycle cooling technologies instead.

3.3 STEAM ELECTRIC POWER GENERATING EFFLUENT LIMITATIONS GUIDELINES

In April 2013, the EPA signed a notice of proposed rulemaking to revise the technology-based effluent limitations guidelines and standards that would strengthen the existing controls on discharges from steam electric power plants.

The proposal sets the first federal limits on the levels of toxic metals in wastewater that can be discharged from power plants, based on technology improvements in the steam electric power industry over the last three decades.

The EPA indicates the updated regulation is needed because the development of new technologies for generating electric power and the widespread implementation of air pollution controls over the last 30 years have altered existing wastewater streams or created new wastewater streams at many power plants.

Generally, the proposed rule would establish new or additional requirements for wastewater streams from the following processes and byproducts associated with steam electric power generation: flue gas desulfurization, fly ash, bottom ash, flue gas mercury control, and gasification of fuels such as coal and petroleum coke.

The proposed national standards are based on data collected from industry and provide flexibility in implementation through a phased-in approach and use of technologies already installed at a number of plants.

The EPA is considering several options in this rulemaking and has identified four preferred alternatives for regulation of discharges from existing sources. These four proposed options differ in the number of waste streams covered the size of the units controlled, and the stringency of the controls that would be imposed. The EPA also projects different levels of pollutant reduction and cost associated with these alternatives.[ix]

The EPA plans to take final action by September 2015. Revised effluent guidelines regarding settling or holding ponds discharges could require compliance with lower standards or elimination of pond usage.

3.4 ZEBRA MUSSEL INFESTATION

KCP&L has been monitoring for zebra mussels at our generation facilities since 1993. The stations take samples from the lakes and the Missouri River that are analyzed for the presence of zebra mussel veligers, the immature stage of their life cycle. We also visually inspect the equipment. Zebra mussels have been found at several locations along the Missouri River in the Kansas City area including our generation stations. A significant zebra mussel infestation could cause operational changes to the stations.

3.5 TOTAL MAXIMUM DAILY LOADS

A Total Maximum Daily Load (TMDL) is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its quality is affected. Under the CWA Section 303(d) requires states to list impaired waters for which the necessary pollution controls have not yet been required and for which a TMDL study has not been written. The state is required to develop a TMDL for all waters on the 303(d) list. Each TMDL document will include allocations of the acceptable load for all sources of the pollutant. It will also include an implementation plan to identify how the load will be reduced to a level that will protect water quality.

If a water body is determined to be impaired, a watershed management plan will be developed that will include the TMDL calculation. Missouri has established acceptable standards for drinking water, fishing, swimming, aquatic life and other designated uses. Waters that don't meet these standards are placed on the 303(d) list.

A stream is considered impaired when it fails to meet Water Quality Standards established by the Clean Water Commission. Section 303(d) of the federal Clean Water Act requires states to identify and list all impaired waters. The list is revised and updated every two years. After studying the scientific data, waters are added or subtracted from the list depending on the status of their health.

Once a TMDL is assigned to a water body, a facility's NPDES permit on renewal will incorporate the TMDL. TMDL that will impact our facilities include temperature, mercury, TSS or example.

A thermal TMDL could also be applied in the future. Future TMDL standards for containments in discharges could restrict these discharges requiring equipment be installed to minimize or control the discharge. Future effluent limitations regarding settling or holding ponds discharges could require compliance with lower standards or elimination of pond usage. Future storm water effluent limitations on storm water discharge could require storm water settling basins be constructed to comply with the standards.

SECTION 4: WASTE MATERIAL IMPACTS

4.1 COAL COMBUSTION RESIDUALS

In December 2014, the EPA finalized national regulations to provide a comprehensive set of requirements for the safe disposal of coal combustion residuals (CCRs), commonly known as coal ash, from coal-fired power plants. The final rule is the culmination of extensive study on the effects of coal ash on the environment and public health. The rule establishes technical requirements for CCR landfills and surface impoundments under Subtitle D of the Resource Conservation and Recovery Act, the nation's primary law for regulating solid waste.

The regulations address the risks from coal ash disposal leaking of contaminants into ground water, blowing of contaminants into the air as dust, and the catastrophic failure of coal ash surface impoundments. Additionally, the rule sets out recordkeeping and reporting requirements as well as the requirement for each facility to establish and post specific information to a publicly-accessible website. This final rule also supports the responsible recycling of CCRs by distinguishing safe, beneficial use from disposal.[x]

The rule or future regulations or legislation could require existing CCR units to be closed and replaced with new landfills designed to more stringent standards. The rule or future regulations or legislation could require the existing use of mine reclamation for disposal of combustion waste products to be eliminated or designed to more stringent standards. The rule of future regulations or legislation could require existing ash handling ponds to be closed and replaced with dry ash handling or disposal. The rule or future regulations or legislation could require beneficial use of combustion waste products to be eliminated or limited requiring landfill disposal.

References

[i] http://www.epa.gov/air/urbanair/6poll.html

[ii] http://www.epa.gov/airmarkets/progsregs/arp/index.html

[iii] http://www.epa.gov/airmarkets/progsregs/arp/basic.html

[iv] http://www.epa.gov/cair/

[v] http://www.epa.gov/air/visibility/fs_2005_6_15.html

[vi] http://www.epa.gov/visibility/actions.html

[vii] http://www.epa.gov/air/lead/pdfs/20081015pbfactsheet.pdf

[viii] http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Final-Regulations-to-Establish-Requirements-for-Cooling-Water-Intake-Structures-at-Existing-Facilities.pdf

[ix]

[x] http://www2.epa.gov/coalash/coal-ash-rule#rulesummary